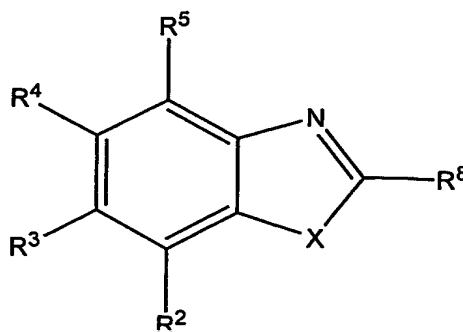


*What is claimed is:*

1. A compound selected from the group represented by Formula I:



Formula I

wherein

X is  $\text{-NR}^1\text{-}$ ,  $\text{-CH=N-}$ ,  $\text{-N=CH-}$ ,  $\text{-CH=CH-}$ , S,  $\text{-(SO)-}$ ,  $\text{-(SO}_2\text{)-}$ , or O;

$\text{R}^1$  is hydrogen, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, optionally substituted heteroaryl, or optionally substituted heteroaralkyl;

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  are independently hydrogen, optionally substituted acyl, optionally substituted alkyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, optionally substituted alkoxy, optionally substituted aralkoxy, optionally substituted heteroaralkoxy, halogen, hydroxyl, nitro, cyano, optionally substituted amino, sulfonyl, sulfanyl, carboxy, optionally substituted alkoxycarbonyl, optionally substituted aminocarbonyl, optionally substituted aryl or optionally substituted heteroaryl; or  $\text{R}^3$  and  $\text{R}^4$ , together with the carbons to which they are attached, form an optionally substituted 5- or 6-membered alicyclic ring; and

$\text{R}^8$  is hydrogen, cyano, halogen, optionally substituted acyl, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, sulfonyl, or optionally substituted amino;

provided that

$\text{R}^4$  is not trifluoromethyl when X is  $\text{NR}^1$ ;  $\text{R}^5$ ,  $\text{R}^3$ ,  $\text{R}^2$ , and  $\text{R}^1$  are hydrogen; and  $\text{R}^8$  is optionally substituted lower alkyl;

$R^3$  is not trifluoromethoxy, optionally substituted lower alkyl or halo when X is S;  $R^5$ ,  $R^4$ , and  $R^2$  are hydrogen; and  $R^8$  is amino;

X is not S, when  $R^3$  and  $R^4$ , together with the carbons to which they are attached form a cyclohexyl ring;  $R^8$  is amino; and  $R^5$  and  $R^2$  are hydrogen; and

$R^4$  is not lower alkyl or halo, when X is  $NR^1$ ;  $R^5$ ,  $R^3$ ,  $R^2$ , and  $R^1$  are hydrogen; and  $R^8$  is amino;

a pharmaceutically acceptable salt of a compound of Formula I;

a pharmaceutically acceptable solvate of a compound of Formula I; or

a pharmaceutically acceptable solvate of a pharmaceutically acceptable salt of a compound of Formula I.

2. The compound of claim 1 comprising one or more of the following:

X is  $-NR^1-$ ;

$R^1$  is hydrogen;

$R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  are independently hydrogen; hydroxyl; halogen; optionally substituted alkyl; acetyl; optionally substituted lower alkoxy; phenyl; phenyl substituted with one or more of the following substituents: halo, optionally substituted lower alkyl, and optionally substituted lower alkoxy; optionally substituted aralkoxy; nitro; or cyano; and

$R^8$  is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

3. The compound of claim 2 wherein one of  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  is not hydrogen.

4. The compound of claim 3 wherein  $R^4$  is trifluoromethyl- and  $R^2$ ,  $R^3$ , and  $R^5$  are hydrogen.

5. The compound of claim 1 comprising one or more of the following:

$R^1$  is  $-(C R^{10} R^{11})_n-NR^{12}R^{13}$ ;

$R^{10}$  and  $R^{11}$  are independently hydrogen or optionally substituted lower alkyl;

n is 1, 2, or 3;

R<sup>12</sup> and R<sup>13</sup> are independently hydrogen, lower alkyl, or acyl; or R<sup>12</sup> and R<sup>13</sup> together with the nitrogen to which they are attached form an optionally substituted heterocyclyl group;

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> are independently hydrogen; hydroxyl; halogen; optionally substituted alkyl; acetyl; optionally substituted lower alkoxy; phenyl; phenyl substituted with one or more of the following substituents: halo, optionally substituted lower alkyl, and optionally substituted lower alkoxy; optionally substituted aralkoxy; nitro; or cyano; and

R<sup>8</sup> is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

6. The compound of claim 5 wherein one of R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> is not hydrogen.

7. The compound of claim 1 wherein

X is -NR<sup>1</sup>-;

R<sup>1</sup> is hydrogen;

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> are independently hydrogen; hydroxyl; halogen; optionally substituted alkyl; acetyl; optionally substituted lower alkoxy; phenyl; phenyl substituted with one or more of the following substituents: halo, optionally substituted lower alkyl, and optionally substituted lower alkoxy; optionally substituted aralkoxy; nitro; or cyano; and

R<sup>8</sup> is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

8. The compound of claim 7 wherein

R<sup>4</sup> is trifluoromethyl-; and

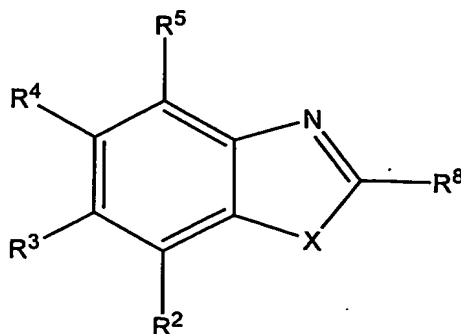
R<sup>2</sup>, R<sup>3</sup>, and R<sup>5</sup> are hydrogen.

9. The compound of claim 1 that is

6-Trifluoromethyl-benzothiazol-2-ylamine;  
6-(2-Chloro-phenyl)-benzothiazol-2-ylamine;  
6-Trifluoromethoxy-benzothiazol-2-ylamine;  
4-Methyl-6-trifluoromethyl-benzothiazol-2-ylamine;  
2-Amino-6-trifluoromethyl-benzothiazol-4-ol;  
4-Chloro-6-trifluoromethyl-benzothiazol-2-ylamine;  
6-Trifluoromethoxy-benzothiazol-2-ylamine;  
6-tert-Butyl-benzothiazol-2-ylamine;  
5-(3-Trifluoromethoxy-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(3-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(4-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(2-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
Furan-2-yl-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
Thiophen-2-yl-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
(4-Methoxy-phenyl)-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
2-Chloro-5-trifluoromethyl-1H-benzoimidazole;  
6-Isopropyl-quinolin-2-ylamine;  
6-Isopropyl-7-methyl-quinolin-2-ylamine;  
6-Trifluoromethyl-quinolin-2-ylamine; or  
6-sec-Butyl-quinolin-2-ylamine.

10. A composition comprising a pharmaceutical excipient and a compound, salt, or solvate thereof of any one of claims 1 to 9.

11. A method of inhibiting the fungal kinesin Kip1 which comprises contacting said kinesin with an effective amount of a compound of the formula:



Formula I

wherein

X is  $-\text{NR}^1-$ ,  $-\text{CH}=\text{N}-$ ,  $-\text{N}=\text{CH}-$ ,  $-\text{CH}=\text{CH}-$ , S,  $-(\text{SO})-$ ,  $-(\text{SO}_2)-$ , or O;

$\text{R}^1$  is hydrogen, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, optionally substituted heteroaryl, or optionally substituted heteroaralkyl;

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  are independently hydrogen, optionally substituted acyl, optionally substituted alkyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, optionally substituted alkoxy, optionally substituted aralkoxy, optionally substituted heteroaralkoxy, halogen, hydroxyl, nitro, cyano, optionally substituted amino, sulfonyl, sulfanyl, carboxy, optionally substituted alkoxycarbonyl, optionally substituted aminocarbonyl, optionally substituted aryl or optionally substituted heteroaryl; or  $\text{R}^3$  and  $\text{R}^4$ , together with the carbons to which they are attached, form an optionally substituted 5- or 6-membered alicyclic ring; and

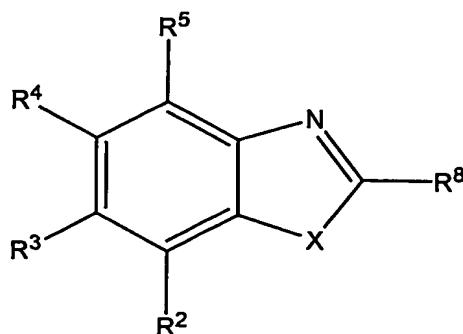
$\text{R}^8$  is hydrogen, cyano, halogen, optionally substituted acyl, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, sulfonyl, or – optionally substituted amino;

a pharmaceutically acceptable salt of a compound of Formula I;

a pharmaceutically acceptable solvate of a compound of Formula I; or

a pharmaceutically acceptable solvate of a pharmaceutically acceptable salt of a compound of Formula I.

12. A method for the treatment of a fungal infection comprising administering to a subject in need thereof a compound of the formula:



Formula I

wherein

X is  $-\text{NR}^1-$ ,  $-\text{CH}=\text{N}-$ ,  $-\text{N}=\text{CH}-$ ,  $-\text{CH}=\text{CH}-$ , S,  $-(\text{SO})-$ ,  $-(\text{SO}_2)-$ , or O;

$\text{R}^1$  is hydrogen, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, optionally substituted heteroaryl, or optionally substituted heteroaralkyl;

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  are independently hydrogen, optionally substituted acyl, optionally substituted alkyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, optionally substituted alkoxy, optionally substituted aralkoxy, optionally substituted heteroaralkoxy, halogen, hydroxyl, nitro, cyano, optionally substituted amino, sulfonyl, sulfanyl, carboxy, optionally substituted alkoxycarbonyl, optionally substituted aminocarbonyl, optionally substituted aryl or optionally substituted heteroaryl; or  $\text{R}^3$  and  $\text{R}^4$ , together with the carbons to which they are attached, form an optionally substituted 5- or 6-membered alicyclic ring; and

$\text{R}^8$  is hydrogen, cyano, halogen, optionally substituted acyl, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, sulfonyl, or optionally substituted amino;

or a pharmaceutically acceptable salt or solvate thereof.

13. The method of claim 11 or 12 comprising one or more of the following

X is  $-\text{NR}^1-$ ;

$\text{R}^1$  is hydrogen;

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  are independently hydrogen; hydroxyl; halogen; optionally substituted alkyl; acetyl; optionally substituted lower alkoxy; phenyl; phenyl substituted with one or more of the following substituents: halo, optionally substituted lower alkyl, and optionally substituted lower alkoxy; optionally substituted aralkoxy; nitro; or cyano;

and

$R^8$  is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

14. The method of claim 13 wherein one of  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  is not hydrogen.

15. The method of claim 14 wherein  $R^4$  is trifluoromethyl- and  $R^2$ ,  $R^3$ , and  $R^5$  are hydrogen.

16. The method of claim 11 or 12 comprising one or more of the following  
 $R^1$  is  $-(C R^{10} R^{11})_n-NR^{12} R^{13}$ ;

$R^{10}$  and  $R^{11}$  are independently hydrogen or optionally substituted lower alkyl;  $n$  is 1, 2, or 3;

$R^{12}$  and  $R^{13}$  are independently hydrogen, lower alkyl, or acyl; or  $R^{12}$  and  $R^{13}$  together with the nitrogen to which they are attached form an optionally substituted heterocyclyl group;

one of  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  is not hydrogen; and

$R^8$  is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

17. The method of claim 16 wherein  $R^4$  is trifluoromethyl- and  $R^2$ ,  $R^3$ , and  $R^5$  are hydrogen.

18. The method of claim 11 or 12 wherein

$X$  is  $-NR^1-$ ;

$R^1$  is hydrogen;

$R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  are independently hydrogen; hydroxyl; halogen; optionally substituted alkyl; acetyl; optionally substituted lower alkoxy; phenyl; phenyl substituted

with one or more of the following substituents: halo, optionally substituted lower alkyl, and optionally substituted lower alkoxy; optionally substituted aralkoxy; nitro; or cyano; and

R<sup>8</sup> is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

19. The method of claim 18 wherein

R<sup>4</sup> is trifluoromethyl-; and

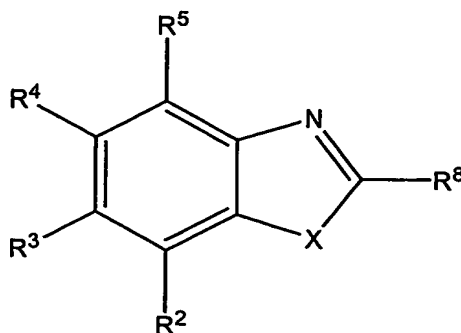
R<sup>2</sup>, R<sup>3</sup>, and R<sup>5</sup> are hydrogen.

20. The method of claim 11 or 12 wherein the compound is

6-Trifluoromethyl-benzothiazol-2-ylamine;  
6-(2-Chloro-phenyl)-benzothiazol-2-ylamine;  
6-Trifluoromethoxy-benzothiazol-2-ylamine;  
4-Methyl-6-trifluoromethyl-benzothiazol-2-ylamine;  
2-Amino-6-trifluoromethyl-benzothiazol-4-ol;  
4-Chloro-6-trifluoromethyl-benzothiazol-2-ylamine;  
6-Trifluoromethoxy-benzothiazol-2-ylamine;  
6-tert-Butyl-benzothiazol-2-ylamine;  
5-(3-Trifluoromethoxy-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(3-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(4-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(2-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
Furan-2-yl-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
Thiophen-2-yl-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
(4-Methoxy-phenyl)-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
2-Chloro-5-trifluoromethyl-1H-benzoimidazole;  
6-Isopropyl-quinolin-2-ylamine;  
6-Isopropyl-7-methyl-quinolin-2-ylamine;  
6-Trifluoromethyl-quinolin-2-ylamine; or  
6-sec-Butyl-quinolin-2-ylamine.



21. The use, in the manufacture of a medicament for treating fungal disease, of a compound of the formula:



Formula I

wherein

X is  $-\text{NR}^1-$ ,  $-\text{CH}=\text{N}-$ ,  $-\text{N}=\text{CH}-$ ,  $-\text{CH}=\text{CH}-$ , S,  $-(\text{SO})-$ ,  $-(\text{SO}_2)-$ , or O;

$\text{R}^1$  is hydrogen, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, optionally substituted heteroaryl, or optionally substituted heteroaralkyl;

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  are independently hydrogen, optionally substituted acyl, optionally substituted alkyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, optionally substituted alkoxy, optionally substituted aralkoxy, optionally substituted heteroaralkoxy, halogen, hydroxyl, nitro, cyano, optionally substituted amino, sulfonyl, sulfanyl, carboxy, optionally substituted alkoxycarbonyl, optionally substituted aminocarbonyl, optionally substituted aryl or optionally substituted heteroaryl; or  $\text{R}^3$  and  $\text{R}^4$ , together with the carbons to which they are attached, form an optionally substituted 5- or 6-membered alicyclic ring; and

$\text{R}^8$  is hydrogen, cyano, halogen, optionally substituted acyl, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, sulfonyl, or optionally substituted amino;

or a pharmaceutically acceptable salt or solvate thereof.

22. The use of claim 21 comprising one or more of the following

X is  $-\text{NR}^1-$ ;

$\text{R}^1$  is hydrogen;

$\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ , and  $\text{R}^5$  are independently hydrogen; hydroxyl; halogen; optionally

substituted alkyl; acetyl; optionally substituted lower alkoxy; phenyl; phenyl substituted with one or more of the following substituents: halo, optionally substituted lower alkyl, and optionally substituted lower alkoxy; optionally substituted aralkoxy; nitro; or cyano; and

$R^8$  is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

23. The use of claim 22 wherein one of  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  is not hydrogen.

24. The use of claim 23 wherein  $R^4$  is trifluoromethyl- and  $R^2$ ,  $R^3$ , and  $R^5$  are hydrogen.

25. The use of claim 21 comprising one or more of the following

$R^1$  is  $-(C R^{10} R^{11})_n - N R^{12} R^{13}$ ;

$R^{10}$  and  $R^{11}$  are independently hydrogen or optionally substituted lower alkyl;  $n$  is 1, 2, or 3;

$R^{12}$  and  $R^{13}$  are independently hydrogen, lower alkyl, or acyl; or  $R^{12}$  and  $R^{13}$  together with the nitrogen to which they are attached form an optionally substituted heterocyclyl group;

one of  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  is not hydrogen; and

$R^8$  is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

26. The use of claim 25 wherein  $R^4$  is trifluoromethyl- and  $R^2$ ,  $R^3$ , and  $R^5$  are hydrogen.

27. The use of claim 21 wherein

$X$  is  $-N R^1 -$ ;

$R^1$  is hydrogen;

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> are independently hydrogen; hydroxyl; halogen; optionally substituted alkyl; acetyl; optionally substituted lower alkoxy; phenyl; phenyl substituted with one or more of the following substituents: halo, optionally substituted lower alkyl, and optionally substituted lower alkoxy; optionally substituted aralkoxy; nitro; or cyano; and

R<sup>8</sup> is hydrogen; amino; amino substituted with optionally substituted lower alkyl; amino substituted with sulfonyl; acyl; phenyl; phenyl substituted with lower alkyl, halo, or lower alkoxy; halogen; optionally substituted lower alkyl; furan-2-yl; furan-3-yl; pyridin-2-yl; pyridin-3-yl; pyridin-4-yl; sulfonyl; or cyano.

28. The use of claim 27 wherein

R<sup>4</sup> is trifluoromethyl-; and

R<sup>2</sup>, R<sup>3</sup>, and R<sup>5</sup> are hydrogen.

29. The use of claim 21 wherein the compound is

6-Trifluoromethyl-benzothiazol-2-ylamine;  
6-(2-Chloro-phenyl)-benzothiazol-2-ylamine;  
6-Trifluoromethoxy-benzothiazol-2-ylamine;  
4-Methyl-6-trifluoromethyl-benzothiazol-2-ylamine;  
2-Amino-6-trifluoromethyl-benzothiazol-4-ol;  
4-Chloro-6-trifluoromethyl-benzothiazol-2-ylamine;  
6-Trifluoromethoxy-benzothiazol-2-ylamine;  
6-tert-Butyl-benzothiazol-2-ylamine;  
5-(3-Trifluoromethoxy-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(3-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(4-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
5-(2-Chloro-phenyl)-1H-benzoimidazol-2-ylamine;  
Furan-2-yl-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
Thiophen-2-yl-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
(4-Methoxy-phenyl)-(5-trifluoromethyl-1H-benzoimidazol-2-yl)-amine;  
2-Chloro-5-trifluoromethyl-1H-benzoimidazole;  
6-Isopropyl-quinolin-2-ylamine;  
6-Isopropyl-7-methyl-quinolin-2-ylamine;

6-Trifluoromethyl-quinolin-2-ylamine; or  
6-sec-Butyl-quinolin-2-ylamine.

30. The use of a compound as defined in claim 21 for the manufacture of a medicament for treating a disorder associated with fungal kinesin Kip1 activity.